



sequence listing.ST25.txt  
SEQUENCE LISTING

<110> Cano, Carlos Antonio Durante  
Nieto, Enrique Gerardo Guillen  
Acosta, Anabel Alvarez  
Munoz, Luis Emilio Carpio  
Vazquez, Diogenes Quintana  
Rodriguez, Carmen Elena Gomez  
Rodriguez, Recardo de la Caridad Siva  
Galvez, Consuelo Nazabal  
Angulo, Maria de Jesus Leal  
Dunn, Alejandro Miguel Martin

<120> Expression System of Heterologous Antigens as Fusion Proteins

<130> LEXSA P-13DIV2

<140> 09/612,925

<141> 2000-07-10

<150> US 08/930,917

<151> 1997-09-16

<150> PCT/CU97/00001

<151> 1997-01-17

<160> 30

<170> PatentIn version 3.2

<210> 1

<211> 1797

<212> DNA

<213> Neisseria meningitidis (group B)

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<210> 2  
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 <212> PRT  
 <213> Neisseria meningitidis (group B)

<400> 2

Met Val Asp Lys Arg Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile  
 1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly  
 20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Asp Leu Glu  
 35 40 45

<210> 3  
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 <213> Neisseria meningitidis (group B)

<400> 3

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<210> 4  
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 <212> PRT  
 <213> Neisseria meningitidis (group B)

<400> 4

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 1 5 10 15

Asp Leu

<210> 5  
 <211> 18  
 <212> PRT  
 <213> Neisseria meningitidis (group B)

<400> 5

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 1 5 10 15

Gln val

<210> 6  
 <211> 32  
 <212> PRT  
 <213> Neisseria meningitidis (group B)

<400> 6

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 20 25 30

<210> 7  
 <211> 32  
 <212> PRT  
 <213> Neisseria meningitidis (group B)

<400> 7

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 20 25 30

sequence listing.ST25.txt

<210> 8  
 <211> 162  
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 <213> Neisseria meningitidis (group B)

<400> 8

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 1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly  
 20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Asp Leu Asp Ser  
 35 40 45

Arg Gly Ile Arg Ile Gly Pro Gly Arg Ala Ile Leu Ala Thr Ala Gly  
 50 55 60

Gly Gly Ala Arg Gln Ser Thr Pro Ile Gly Leu Gly Gly Ala Leu Tyr  
 65 70 75 80

Thr Thr Ala Gly Gly Gly Ala Arg Lys Ser Ile Thr Lys Gly Pro Gly  
 85 90 95

Arg Val Ile Tyr Ala Thr Ala Gly Gly Gly Ala Arg Lys Arg Ile His  
 100 105 110

Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Ala Gly Gly Gly Ala Arg  
 115 120 125

Lys Arg Ile Thr Met Gly Pro Gly Arg Val Tyr Tyr Thr Thr Ala Gly  
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Gly Gly Ala Ser Ile Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val  
 145 150 155 160

Thr Ile

<210> 9  
 <211> 489  
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 <213> Neisseria meningitidis (group B)

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sequence listing.ST25.txt

gcaacagctg gcggtggcgc acgtcaatct acccctattg gtttaggtca ggctctgtat 240  
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 gccaccgcgg gcggcggtgc ccgtaagcgt atccacattg gcccaggccg tgcattctat 360  
 actacagcag gtggtggcgc acgtaaacgc atcactatgg gtcctggtcg cgtctattac 420  
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<210> 10  
 <211> 47  
 <212> PRT  
 <213> Neisseria meningitidis (group B)

<400> 10

Met Leu Asp Lys Arg Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile  
 1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly  
 20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Glu Thr Asp  
 35 40 45

<210> 11  
 <211> 27  
 <212> DNA  
 <213> Artificial

<220>  
 <223> Primer 5' No. 1573

<400> 11  
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<210> 12  
 <211> 29  
 <212> DNA  
 <213> Artificial

<220>  
 <223> Primer 3' No. 1575

<400> 12  
 tttctagatc caaagtaatc agggatatcg 29

<210> 13  
 <211> 26  
 <212> DNA  
 <213> Artificial

<220>  
 <223> Primer 3' No. 2192

sequence listing.ST25.txt

<400> 13  
ggcggttctg ccgattaagg atccga 26

<210> 14  
<211> 146  
<212> DNA  
<213> Artificial

<220>  
<223> Derived fragment from the first 47 amino acids of the P64k antigen of N. meningitidis. The restriction sites NcoI (positions 3 to 8) and XbaI (positions 139 to 144) are introduced by PCR, which provokes changes in the nucleotide sequence of this

<400> 14  
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cgaaaatgta gatattatcg cggttgaagt aaacgtgggc gacactattg ctgtggacga 120  
taccctgatt actttggatc tagaaa 146

<210> 15  
<211> 47  
<212> PRT  
<213> Artificial

<220>  
<223> Stabilizer fragment derived from the first 47 amino acids of the P64k antigen of N. meningitidis

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1 5 10 15  
Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly  
20 25 30  
Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Asp Leu Glu  
35 40 45

<210> 16  
<211> 16  
<212> DNA  
<213> Artificial

<220>  
<223> oligonucleotide used to introduce restriction sites XbaI, EcoV, and BamHI in the 3' end of the stabilizer fragment of SEQ. ID. NO. 13

<400> 16  
ctagatttga tatcag 16

<210> 17

sequence listing.ST25.txt

<211> 16  
 <212> DNA  
 <213> Artificial

<220>  
 <223> oligonucleotide used to introduce restriction sites XbaI, EcoV,  
 and BamHI in the 3' end of the stabilizer fragment of SEQ. ID.  
 NO. 13

<400> 17  
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16

<210> 18  
 <211> 15  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 18

Ser Arg Gly Ile Arg Ile Gly Pro Gly Arg Ala Ile Leu Ala Thr  
 1 5 10 15

<210> 19  
 <211> 15  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 19

Arg Gln Ser Thr Pro Ile Gly Leu Gly Gln Ala Leu Tyr Thr Thr  
 1 5 10 15

<210> 20  
 <211> 15  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 20

Arg Lys Ser Ile Thr Lys Gly Pro Gly Arg Val Ile Tyr Ala Thr  
 1 5 10 15

<210> 21  
 <211> 15  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 21

Arg Lys Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr  
 1 5 10 15

<210> 22  
 <211> 15  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 22

sequence listing.ST25.txt

Arg Lys Arg Ile Thr Met Gly Pro Gly Arg Val Tyr Tyr Thr Thr  
1 5 10 15

<210> 23  
<211> 15  
<212> PRT  
<213> Neisseria meningitidis (group B)

<400> 23

Ser Ile Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile  
1 5 10 15

<210> 24  
<211> 15  
<212> PRT  
<213> Human immunodeficiency virus type 1

<400> 24

Thr Ser Ile Thr Ile Gly Pro Gly Gln Val Phe Tyr Arg Thr Gly  
1 5 10 15

<210> 25  
<211> 15  
<212> PRT  
<213> Human immunodeficiency virus type 1

<400> 25

Arg Gln Arg Thr Ser Ile Gly Gln Gly Gln Ala Leu Tyr Thr Thr  
1 5 10 15

<210> 26  
<211> 5  
<212> PRT  
<213> Artificial

<220>  
<223> Spacer peptide that divides the various V3 epitopes in the MEPS  
TAB3, TAB4, TAB9, and TAB13

<400> 26

Ala Gly Gly Gly Ala  
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<210> 27  
<211> 141  
<212> PRT  
<213> Artificial

<220>  
<223> Multiepitopic polypeptides that includes several copies of the  
central part of the variable region 3 of the gp120 protein of the  
HIV-1



sequence listing.ST25.txt

<400> 27

Met Ala Pro Thr Ser Ser Ser Thr Ala Gln Thr Gln Leu Gln Leu Glu  
1 5 10 15

His Leu Leu Leu Asp Leu Gln Ile Phe Leu Ser Arg Gly Ile Arg Ile  
20 25 30

Gly Pro Gly Arg Ala Ile Leu Ala Thr Ala Gly Gly Gly Ala Arg Gln  
35 40 45

Ser Thr Pro Ile Gly Leu Gly Gly Ala Leu Tyr Thr Thr Ala Gly Gly  
50 55 60

Gly Ala Arg Lys Ser Ile Thr Lys Gly Pro Gly Arg Val Ile Tyr Ala  
65 70 75 80

Thr Ala Gly Gly Gly Ala Arg Lys Arg Ile His Ile Gly Pro Gly Arg  
85 90 95

Ala Phe Tyr Thr Thr Ala Gly Gly Gly Ala Arg Lys Arg Ile Thr Met  
100 105 110

Gly Pro Gly Arg Val Tyr Tyr Thr Thr Ala Gly Gly Gly Ala Ser Ile  
115 120 125

Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile  
130 135 140

<210> 28

<211> 162

<212> PRT

<213> Artificial

<220>

<223> Multiepitopic polypeptides that includes several copies of the central part of the variable region 3 of the gp120 protein of the HIV-1

<400> 28

Met Val Asp Lys Arg Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile  
1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly  
20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Asp Leu Asp Ser  
35 40 45

Arg Gly Ile Arg Ile Gly Pro Gly Arg Ala Ile Leu Ala Thr Ala Gly  
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50

55

60

Gly Gly Ala Arg Gln Ser Thr Pro Ile Gly Leu Gly Gly Ala Leu Tyr  
65 70 75 80

Thr Thr Ala Gly Gly Gly Ala Arg Lys Ser Ile Thr Lys Gly Pro Gly  
85 90 95

Arg Val Ile Tyr Ala Thr Ala Gly Gly Gly Ala Arg Lys Arg Ile His  
100 105 110

Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Ala Gly Gly Gly Ala Arg  
115 120 125

Lys Arg Ile Thr Met Gly Pro Gly Arg Val Tyr Tyr Thr Thr Ala Gly  
130 135 140

Gly Gly Ala Ser Ile Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val  
145 150 155 160

Thr Ile

<210> 29  
<211> 202  
<212> PRT  
<213> Artificial

<220>  
<223> Multiepitopic polypeptides that include several copies of the  
central part of the variable region 3 of the gp120 protein of the  
HIV-1

<400> 29

Met Val Asp Lys Arg Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile  
1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly  
20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Asp Leu Asp Ser  
35 40 45

Arg Gly Ile Arg Ile Gly Pro Gly Arg Ala Ile Leu Ala Thr Ala Gly  
50 55 60

Gly Gly Ala Arg Gln Ser Thr Pro Ile Gly Leu Gly Gln Ala Leu Tyr  
65 70 75 80

sequence listing.ST25.txt

Thr Thr Ala Gly Gly Gly Ala Arg Lys Ser Ile Thr Lys Gly Pro Gly  
85 90 95

Arg Val Ile Tyr Ala Thr Ala Gly Gly Gly Ala Arg Lys Arg Ile His  
100 105 110

Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Ala Gly Gly Gly Ala Arg  
115 120 125

Lys Arg Ile Thr Met Gly Pro Gly Arg Val Tyr Tyr Thr Thr Ala Gly  
130 135 140

Gly Gly Ala Arg Gln Arg Thr Ser Ile Gly Gln Gly Gln Ala Leu Tyr  
145 150 155 160

Thr Thr Ala Gly Gly Gly Ala Thr Ser Ile Thr Ile Gly Pro Gly Gln  
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Val Phe Tyr Arg Thr Gly Ala Gly Gly Gly Ala Ser Ile Arg Ile Gln  
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Arg Gly Pro Gly Arg Ala Phe Val Thr Ile  
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<210> 30  
<211> 368  
<212> DNA  
<213> Artificial

<220>  
<223> Synthetic fragment that codifies for MEP TAB9. Restriction sites  
XbaI and BamHI are introduced.

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